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09/751,273	12/29/2000	Ashvin H. Chheda	11719RRUS01U	8942

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Garlick & Harrison
P.O. Box 670007
Dallas, TX 75367

EXAMINER	
NGUYEN, ALAN V	

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2662	7

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/751,273	Applicant(s) CHHEDA ET AL.	
	Examiner Alan Nguyen	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19 and 22* is/are rejected.

7)☒ Claim(s) *20,21,23 and 24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. **Claim 24** is objected to because of the following informalities:

On line 2, "claim 21" should read "claim 22".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-19 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Chheda et al (US 6,073,025) hereafter Chheda.

Regarding **claim 1** Chheda discloses a wireless transceiver system, comprising:

a processor; a memory for storing computer instructions that define operational logic of-the wireless transceiver system **(the base station and mobile station each have a processor and memory that is used for storing and relaying power control information. Figure 9 shows processor 920 in the base station. Column 11, lines 10-15, discloses that the default power change factor is stored in the mobile station for future transmissions to the base station. The mobile station must have a processor to carry out the instructions)**, wherein the logic causes the transceiver system to increase or decrease transmission power lever by a factor that is

characterized by the equation of N + delta according to whether a data transmission rate is increased or decreased by a factor of N and wherein the logic defines the value of delta so that it varies according to at least one of detected system conditions and system data transmission rates **($Value_{rate\_x\ to\ rate\_y}$ is the value that is used to change the transmit power based on transmission rate change. It is a default value that is predetermined; col 10 lines 58-67 and col 11 lines 1-9. In the embodiment the transmit power level is constantly changed. Change in transmit power is related to the symbol-energy-to-noise-density ratio, $^{E}S/N_O$. $^{E}S/N_O$ is continually adjusted based on the frame error rate. If quality of the frame is good the energy/noise value is decreased by a step. This change is then correlated to the transmit power level. The mobile station then instructs the base station to adjust power level accordingly. The adjustment is in increments/decrements of 0.5dB; col 4 lines 33-56. The continuous change in value for optimization can be interpreted as a deviation (delta) from the original $Value_{rate\_x\ to\ rate\_y}$ default value; for example see col 10 lines 45-67 and col 11 lines 1-62)**; and

an internal bus coupled to the processor and the memory wherein the processor receives the computer instructions from the memory over the bus to execute the computes instructions **(A bus is inherently used to execute instructions between the processor and memory in the mobile and base stations)**.

Regarding **claim 2** Chheda discloses where the delta value varies according to the amount of change in the data transmission rate **(Change in transmit power is**

related to the symbol-energy-to-noise-density ratio, $^{E}S/N_{O}$. In order to modify the target $^{E}S/N_{O}$, the quality of each frame is determined. If quality of the frame is good the energy/noise value is decreased by a step. This change is then correlated to the transmit power level. The mobile station instructs the base station to adjust power level accordingly. The adjustment is in increments/decrements of 0.5dB; col 4 lines 33-56).

Regarding **claims 3 and 4** Chheda discloses where a first and second delta value relates to an additional amount of power reduction when the amount of change in the data transmission rate is reduced to HALF relative to FULL data transmission rates, and is reduced to QUARTER relative to FULL data transmission rates, respectively **(column 11 lines 1-9 discloses the predetermined power changes going from full rate to half rate, full rate to quarter rate, and vice versa. These values are continually decremented (delta value) until the frame error rates are at the lowest level where they can sustain acceptable quality. The delta values vary based on the frame error rate at that particular transmission rate; col 11 lines 26-44; col 4 lines 33-56).**

Regarding **claim 5** Chheda discloses where the delta values vary according to network conditions **(In order to modify the target $^{E}S/N_{O}$, the quality of each frame is determined. If quality of the frame is good the energy/noise value is decreased by a step. This change is then correlated to the transmit power level is continually adjusted based on the frame error rate; col 4 lines 33-57.**

Regarding **claim 6** Chheda discloses comprising a base station controller **(see col 9 lines 49-53)**.

Regarding **claim 7** Chheda discloses comprising a base station transceiver system **(see col 3 lines 31-39)**.

Regarding **claims 8-10** Chheda discloses where the computer instructions define logic for heuristically varying the values of delta, and where the computer instructions define logic for varying the values of delta according to the frame error rate being realized by the mobile station wherein the mobile station transmits a calculated frame error rate to the base station. **(Change in transmit power is related to the symbol-energy-to-noise-density ratio, $^{E}S/N_O$. In order to modify the target $^{E}S/N_O$, the quality of each frame is determined. If quality of the frame is good the energy/noise value is decreased by a step. This change is then correlated to the transmit power level. The mobile station instructs the base station to adjust power level accordingly. The adjustment is in increments/decrements of 0.5dB; col 4 lines 33-56. Regarding claim 9 the Eb/No value is equivalent to half of $^{E}S/N_O$; col 3 lines 46-51).**

Regarding **claim 11** Chheda discloses a method for transmitting communication signals from a first wireless transceiver to a second wireless transceiver in a code division multiple access network **(The use of fast forward link power control in a CDMA system between a base station and a mobile station; col 4 lines 13-16; col 1 lines 10-15; col 2 lines 54-58)**, comprising:

transmitting the communication signals at a first data rate and at a first power level **(col 11 lines 1-6 discloses transmitting initially at a full transmit power with a corresponding rate)** ; and

transmitting the communication signals at a second data rate and at a second power level wherein a difference in the first and second data transmission rates is less than the difference in the first and second power levels **(Change in transmit power is related to $^{E}S/N_{O}$. The quality of each frame is determined. If quality of the frame is good the energy/noise value is decreased by a step. This change is then correlated to the transmit power level. The mobile station instructs the base station to adjust power level accordingly; col 4 lines 33-56. Once the power rate has changed to a predetermined level based on the transmission rate, further optimization is done. If the frame rate is good a decrease in power level is carried out based on the objective of optimization in the embodiment. The network determines from all the received power levels, through an averaging technique, the amount of decrease used. Since the power level has decreased and the transmission rate constant, the difference in power levels would be greater; col 12 lines 4-8)**.

Regarding **claims 12-15** Chheda discloses different scenarios where the data rate is a full data rate and wherein the first power level is a full power level. Other scenarios include half, quarter, and eighth rates **(Chheda discloses different scenarios where there is a power and transmission rates change from full rate to**

half rate, quarter rate, and eighth rate. The values are further optimized based on the readings of the $^{E}S/N_O$ value and frame error rate values; col 11 lines 1-8; col 11 lines 44-48; col 4 lines 33-56).

Regarding **claims 16 and 17** Chheda discloses the step of transmitting a target frame error rating from the first transceiver to the second transceiver whereby the second transceiver bases its power control processing in part on the received frame error rate, and one of a first or a second target frame error rate is transmitted according to network conditions **(Change in transmit power is related to the symbol-energy-to-noise-density ratio, $^{E}S/N_O$. In order to modify the target $^{E}S/N_O$, the quality of each frame is determined. If quality of the frame is good the energy/noise value is decreased by a step. This change is then correlated to the transmit power level. The mobile station instructs the base station to adjust power level accordingly. The adjustment is in increments/decrements of 0.5dB; col 4 lines 33-56. Regarding claim 17, Chheda discloses the frame error rate target is set in such a way as to maintain the required error frame rate. This rate varies due to different network condition such as low or high traffic)**.

Regarding **claims 18 and 19** Chheda discloses where the first target frame error rate is transmitted whenever voice is being transmitted, and second target frame error rate is transmitted whenever voice is not being transmitted **(col 4 lines 33-56. Regarding claim 17, Chheda discloses the frame error rate target is set in such a way as to maintain the required frame error rate. This rate varies due to different network condition such as low or high traffic. Traffic content is different when**

there is voice data and when there is no voice data. It would be known that based on these 2 conditions, the frame error rate must have differing values).

Regarding **claim 22** Chheda discloses a method for determining whether to transmit power up or power down commands, comprising:

transmitting power up and power down commands according to whether a calculated frame error rate for a received communication signal is higher or lower than a target frame error rate, and using one of at least two target frame error rates according to a data rate of the received communication signals **(Change in transmit power is related to the symbol-energy-to-noise-density ratio, $^{E}S/N_{O}$. In order to modify the target $^{E}S/N_{O}$, the quality of each frame is determined. If quality of the frame is good the energy/noise value is decreased by a step. This change is then correlated to the transmit power level. The mobile station instructs the base station to adjust power level accordingly. The adjustment is in increments/decrements of 0.5dB; col 4 lines 33-56)**.

Allowable Subject Matter

4. Claims 20, 21, 23, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Regarding **claim 20** the cited references taken individually or in combination fails to particularly disclose the combination of where the first target frame error rate is transmitted whenever a lull in a

conversation is detected. Regarding **claim 21** the cited references taken individually or in combination fails to particularly disclose the combination of where the mobile station bases its power control commands based upon a first frame error rate whenever communication signals are received at full power. Regarding **claim 23** the cited references taken individually or in combination fails to particularly disclose the combination of where the first frame error rate is approximately equal to one percent. Regarding **claim 24** the cited references taken individually or in combination fails to particularly disclose the combination of where the second frame error rate is approximately equal to five percent.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patent is cited to show the state of the art with respect to transmit power control in CDMA systems:

US Patent (6,393,276) to Vanghi

US Patent (5,396,516) to Padovani et al

US Patent (6,597,723) to Zeira et al

US Patent (6,603,752) to Saifuddin et al

US Patent (6,690,652) to Sadri

US Patent (6,542,483) to Dinc et al

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Nguyen whose telephone number is 703-305-0369. The examiner can normally be reached on 9am-6pm ET

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 703-305-4798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AVN
April 13, 2004

RICKY NGO
PRIMARY EXAMINER